

Linear Algebra
MATH 224W – Spring 2016

Week 8: Vector Spaces

Writing Assignment #7

due ~~Monday, Mar. 7~~ Thursday, Mar. 10

§4.2 #24, 25

AP #1 Prove that the set of all $n \times n$ symmetric matrices is a subspace of $M_{n \times n}$.

Note: when using the Subspace Criteria Theorem, don't forget to show that the set in question is nonempty.

AP #2 Let $A \in M_{n \times n}$, and let $\lambda \in \mathbb{R}$. Let W be the subset of \mathbb{R}^n defined by

$$W := \{\mathbf{v} \in \mathbb{R}^n \mid A\mathbf{v} = \lambda\mathbf{v}\}.$$

Prove that W is a subspace of \mathbb{R}^n .

Homework #7

due ~~Thursday, Mar. 10~~ Friday, Mar. 11

§4.2 #2, 4, 7, 8, 10

For #7, 8, 10 please **change the directions to**

“Give **one** property of Definition 4.4 that fails to hold.”

§4.3 #2, 6, 8(b), 10(b)(c), 16, 18, 30, 33(a)(b)

For #8, see Example 4 in Section 4.2 for the definition of \mathbb{R}_n .

Note: when using the Subspace Criteria Theorem, don't forget to show that the set in question is nonempty.